

fig. 1

Select T1.A, T2.B From T1, T2, T3
 Where T1.C=99 AND T2.D='george' AND T3.E=66
 AND T1.F=T2.F AND T2.G = T3.G;

$\Pi_{T1.A, T2.B}$

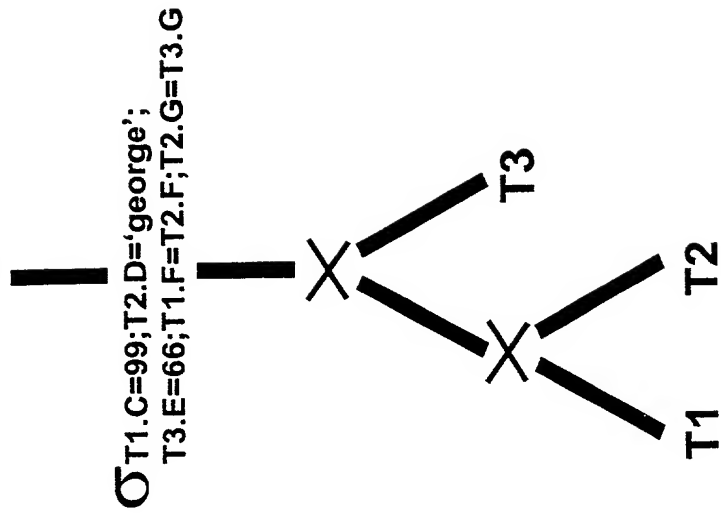


FIG. 2

Select T1.A, T2.B From T1, T2, T3
Where T1.C=99 AND T2.D='george' AND T3.E=66
AND T1.F=T2.F AND T2.G = T3.G;

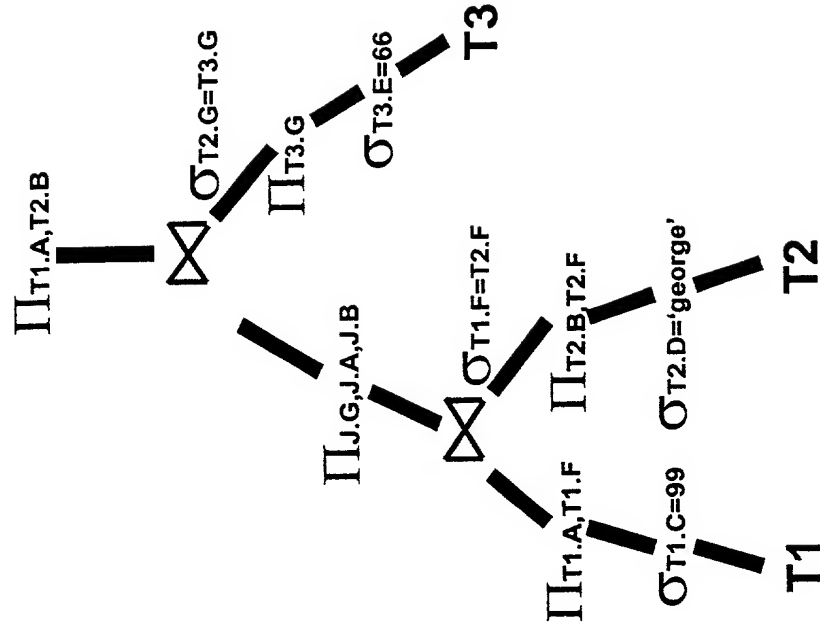
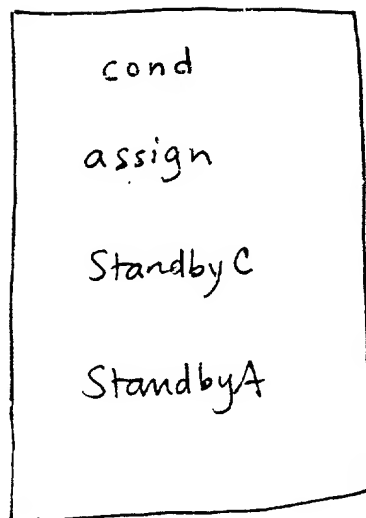


FIG. 3

Ti



σ_{cfi}

π_{cfsi}

FIG. 4

FIG. 5

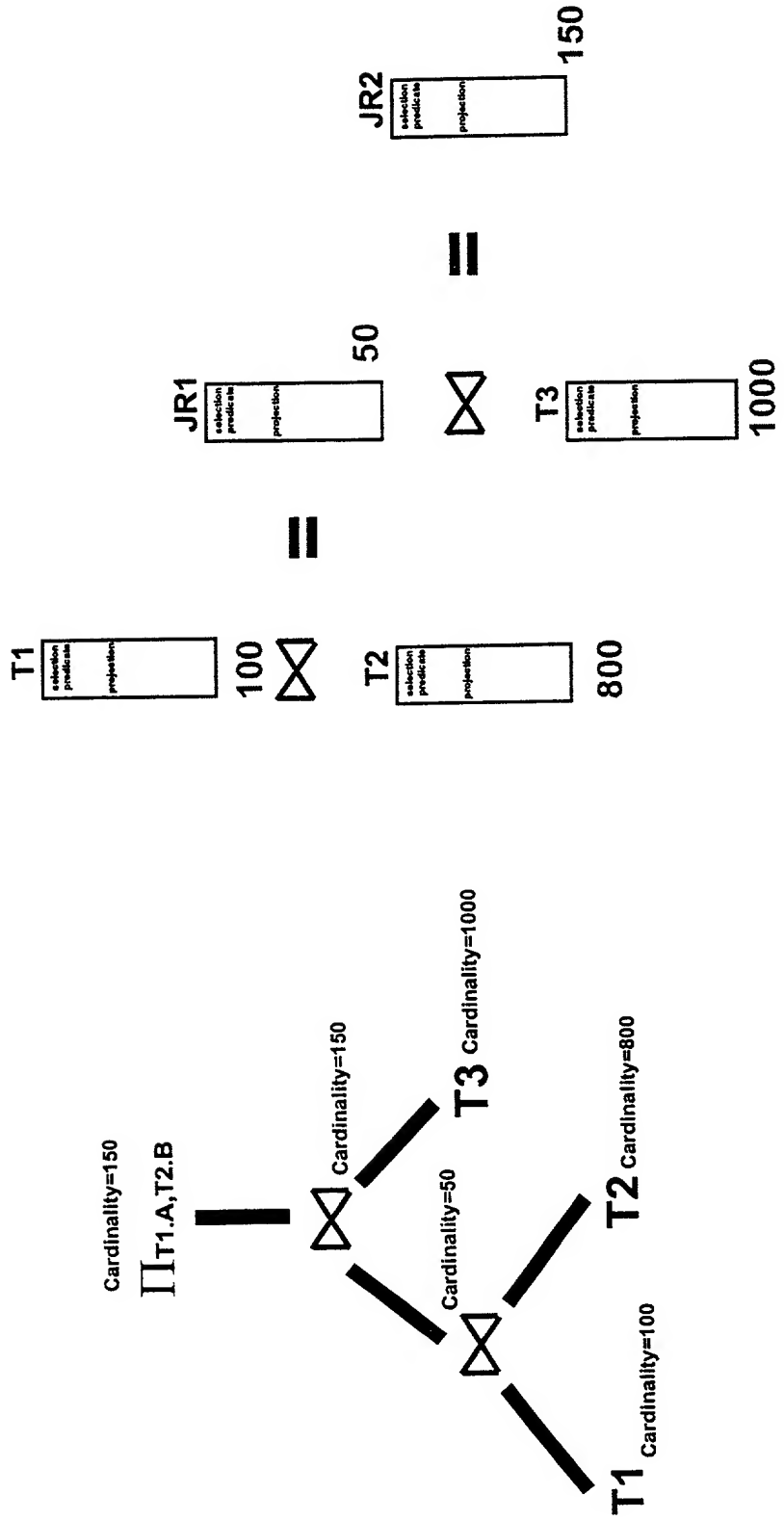
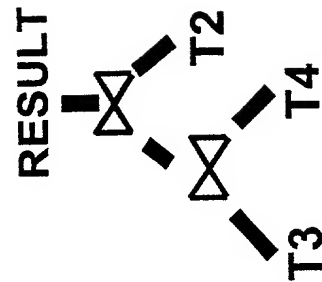
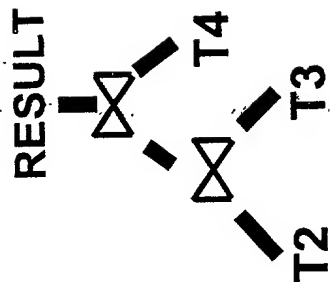
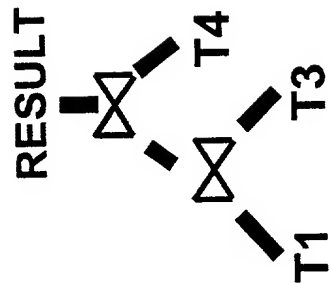
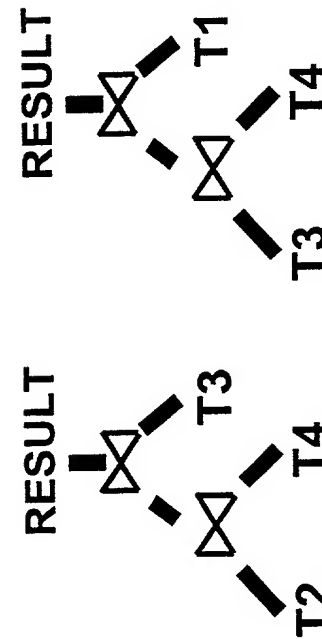
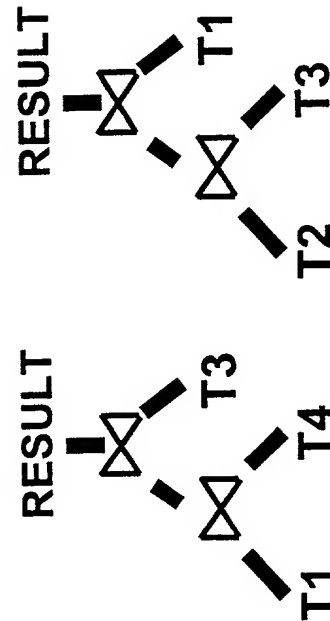
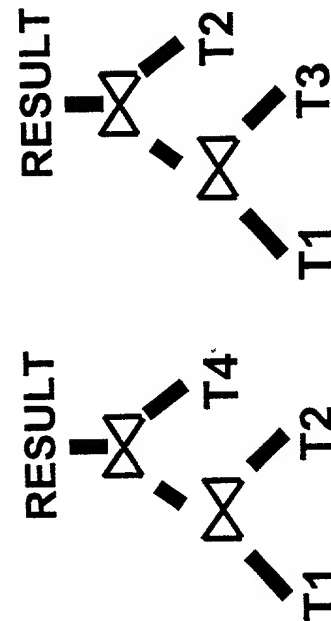
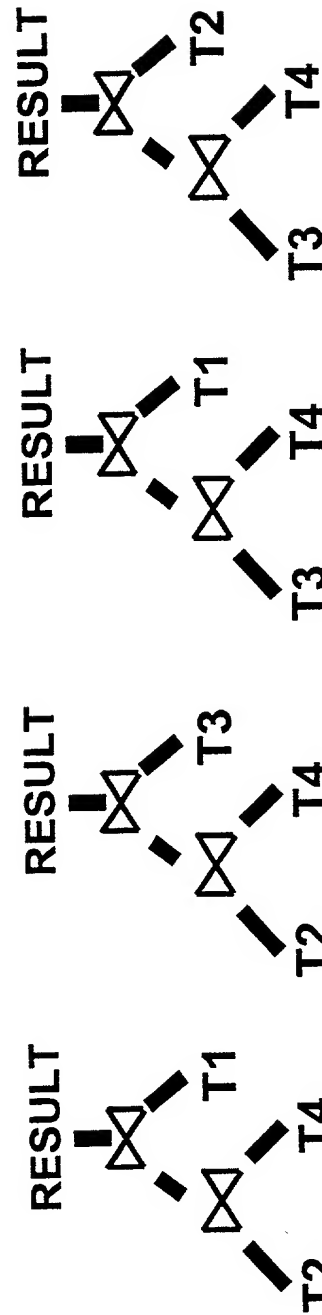
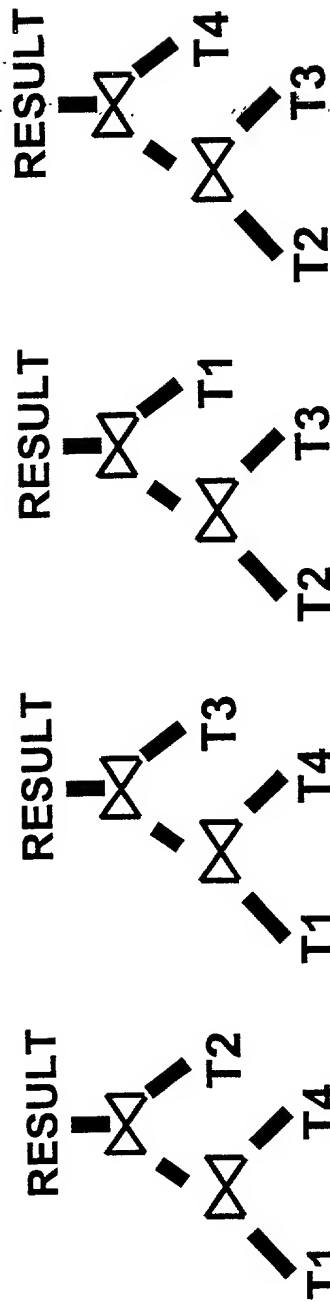
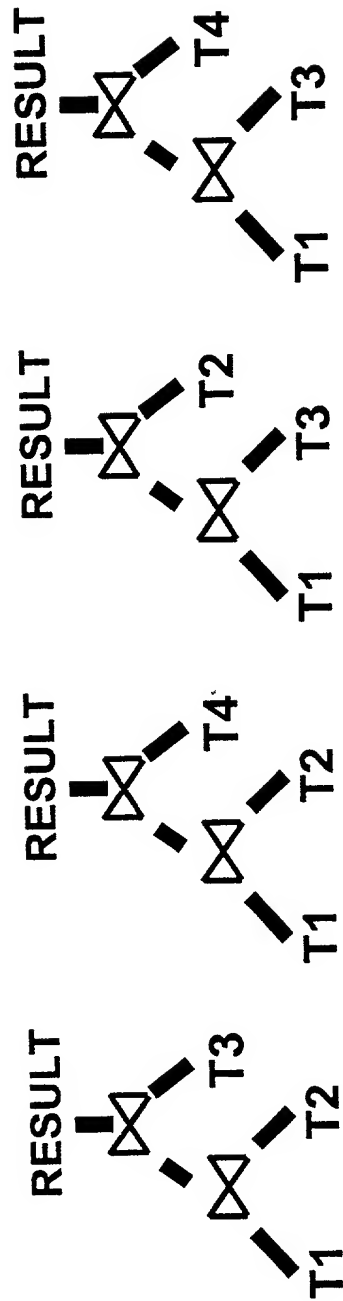


Fig. 6
Fault*03900T



Transform Predicate
Expression Into
Conjunctive Normal Form

102

Push Predicates
and Projections Down
Query Tree

104

Perform Per-Relation
Access Planning

Search For Applicable
DBS Indexes

Calculate Selectivity
And Cardinality

106

108

110

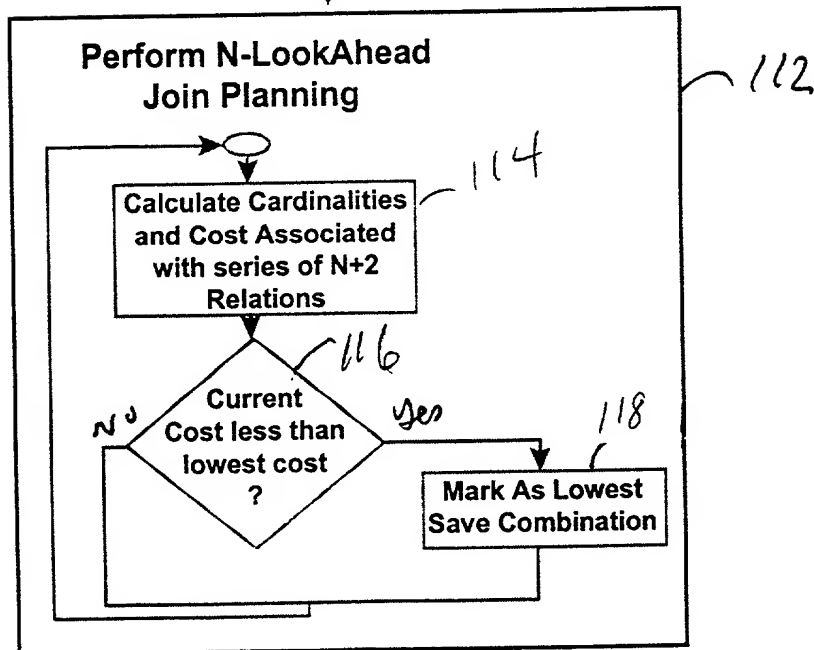


FIG. 7

FIG. 8

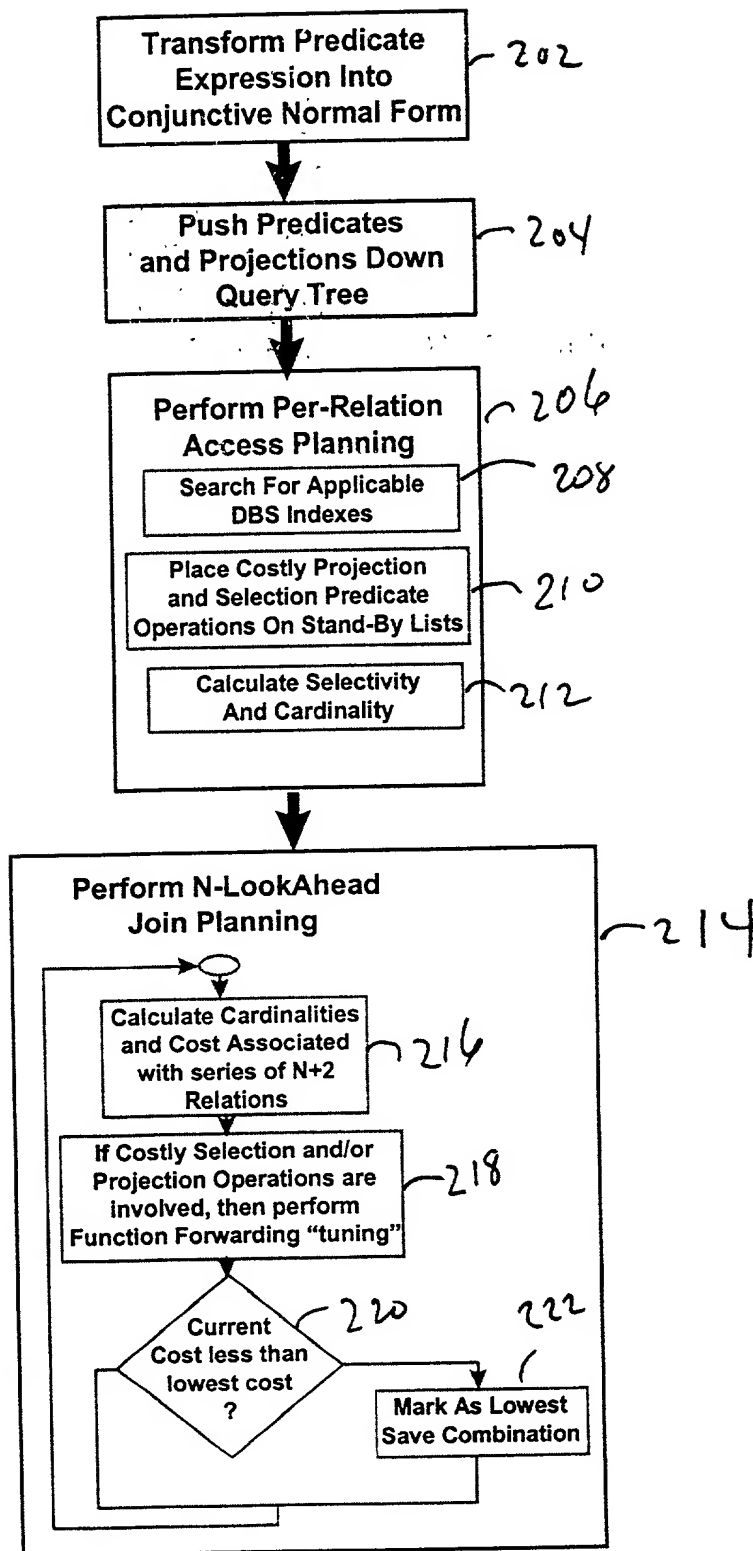


FIG. 8

Select T1.A, T2.B, T3.Video.Colorize() From T1, T2, T3, T4
 Where T1.face = IMAGE(\url\myface.jpg) AND T2.D='george'
 AND T4.Audio = AUDIO(\url\georgeharrison.wav)
 AND T1.F=T2.F AND T2.G = T3.G AND T1.H = T4.H
 AND T2.K=T4.K;

\prod T1.A, T2.B, T3.Video.Colorize()

σ T1.face=IMAGE(\url\myface.jpg); T2.D='george';
 T4.Audio=AUDIO(\url\georgeharrison.wav);
 T1.F=T2.F; T2.G=T3.G; T1.H=T4.H; T2.K=T4.K

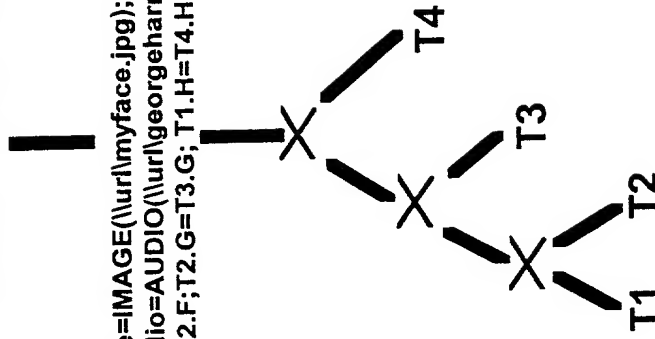
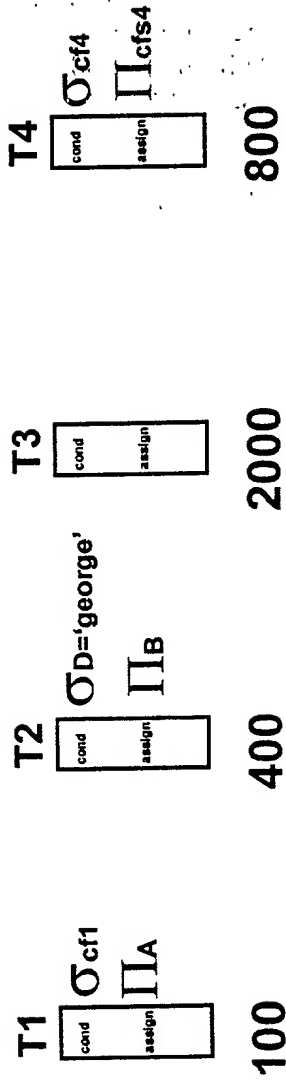


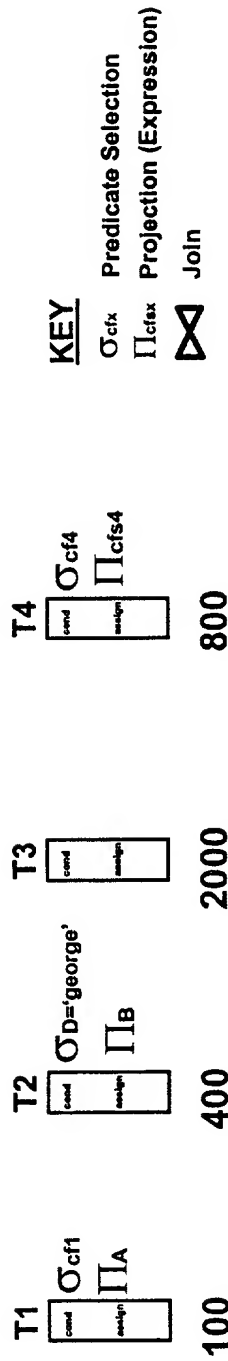
FIG. 9

Select T1.A, T2.B, T4.Video.Colorize() From T1, T2, T3, T4
 Where T1.face = IMAGE(\\url\\myface.jpg) AND T2.D='george',
 AND T4.Audio = AUDIO(\\url\\georgeharrison.wav)
 AND T1.F=T2.F AND T2.G = T3.G AND T1.H = T4.H
 AND T2.K=T4.K;



T1.face = IMAGE(\\url\\myface.jpg)	σ_{cf1}
T4.Video.Colorize()	π_{cfs4}
T4.Audio = AUDIO(\\url\\georgeharrison.wav)	σ_{cf4}

FIG. 10



Exception Case : If Index Defined On Costly Predicate
Then Execute Costly Predicate In Place

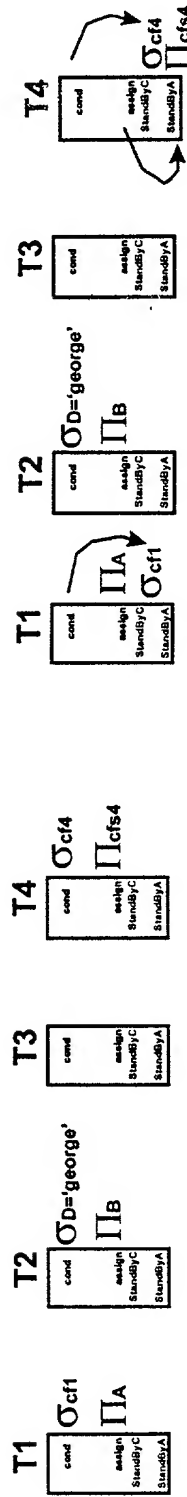
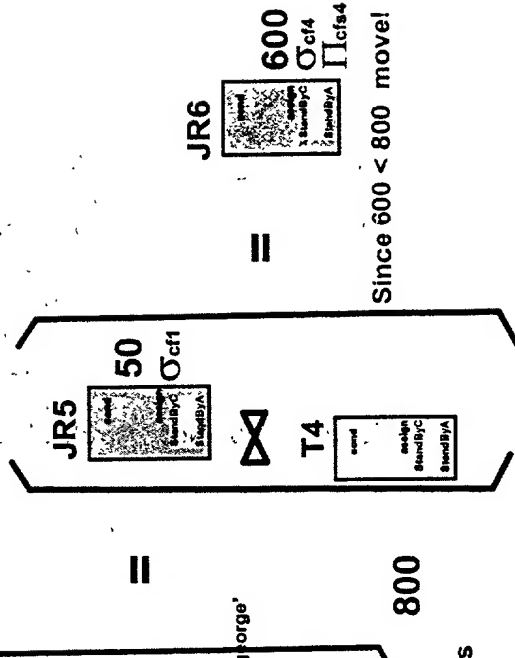
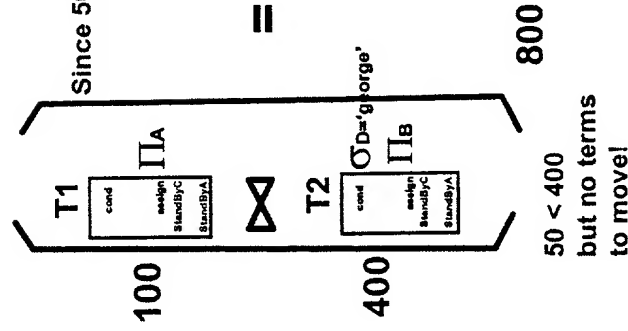
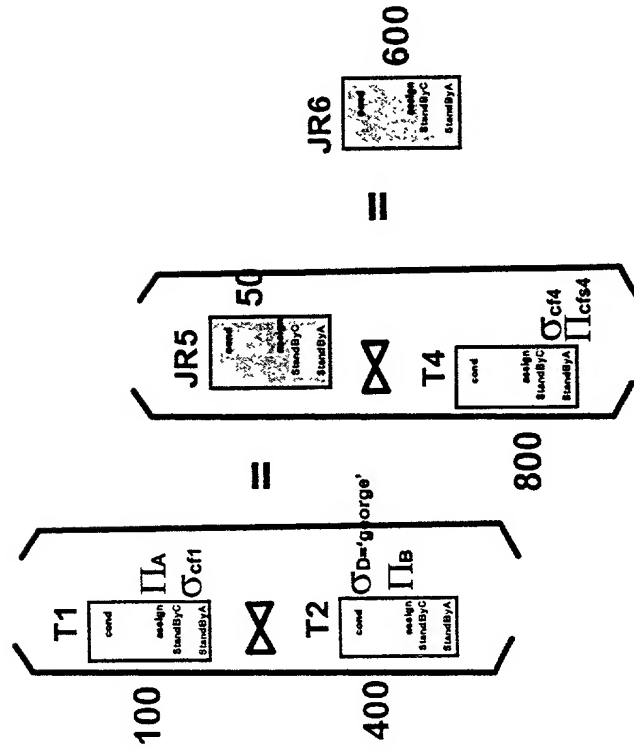
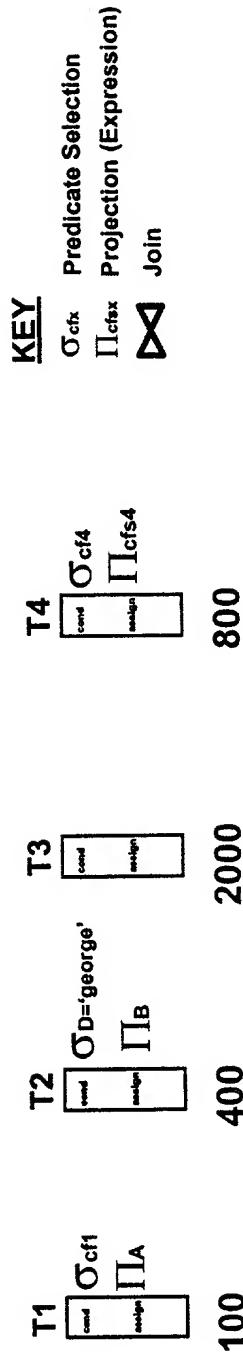


Fig. 11



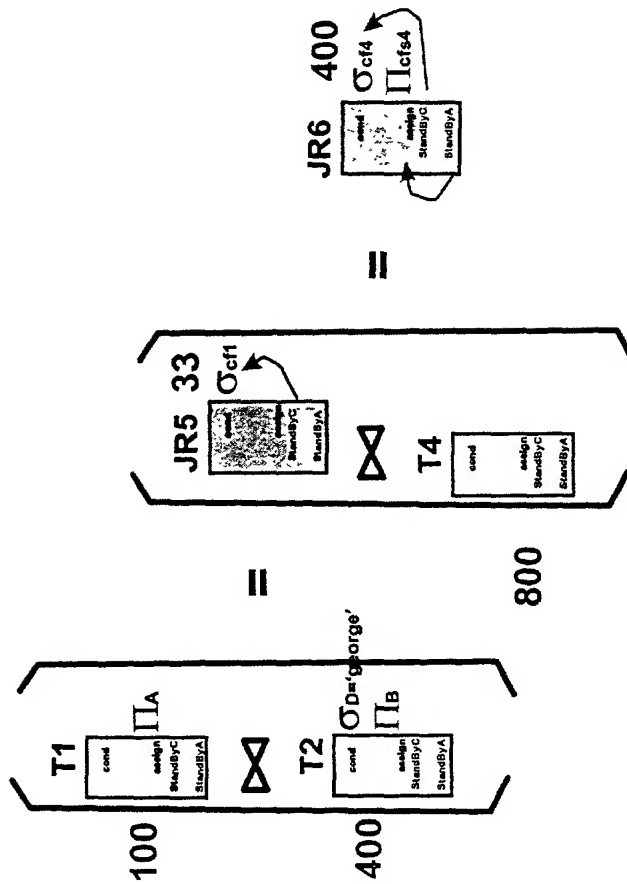
STEP 2 : Calculate Access, Join Costs And All Cardinalities As Currently Done. (Ignoring Terms On StandBy)

(Triplet Costing Within LookAhead Module)

STEP 3 : Examine Cardinalities For The “Triplet” and Move Costly Functions Toward Lowest Cardinality.

		KEY	
		σ_{cfk}	Predicate Selection
		Π_{cfsx}	Projection (Expression)
		\bowtie	Join
T1	σ_{cf1} Π_A		
100			
T2	$\sigma_{D='george'}$ Π_B		
400			
T3			
2000			
T4	σ_{cf4} Π_{cfs4}		
800			

((1,2), 4)



Repeat This Process
For Every Triplet
Containing Costly Funcs

F16, 13

(Triplet Costing Within LookAhead Module)

**STEP 4 : Move Terms From StandBy Lists
To Active Lists And Calculate New Join
Cardinalities And "Tuned" Cost.**